

**Notice of Allowability**

Application No.

09/964,115

Examiner

Guillermo Munoz

Applicant(s)

DOUGLAS ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 26 September 2001.
2. ☒ The allowed claim(s) is/are 1-16.
3. ☒ The drawings filed on 26 September 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets" ) must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948 ) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

*Im Bonels*  
**JEAN B. CORRIELUS**  
**PRIMARY EXAMINER**

2/18/05

**DETAILED ACTION**

**EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Derrick Reid and Randal K. Douglas on February 15, 2005.

The application has been amended as follows:

IN THE SPECIFICATION:

On page 1, line 21, change "copending application" to —co-owned US Patent 6,516,021—.

On page 1, line 22-23, delete "S/N: 09/396,105 filed 09/14/99,".

On page 15 line 25 change "nd" to —,—.

IN THE CLAIMS:

In claim 1, on line 20 change "an quadrature" to —and quadrature—.

In claim 1, on line 21 change "a amplitude" to —an amplitude—.

In claim 1, on line 22 delete "and frequency error state".

In claim 1, on line 27 change "the frequency error state" to —a frequency error state—.

In claim 6, on line 3 change "signals" to —signal—.

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In claim 7, on lines 9-10 delete “and the carrier frequency error state”.

In claim 9, on line 4 change “the GPS” to —a GPS—.

In claim 9, on line 20 change “an quadrature” to —and quadrature—.

In claim 9, on line 21 change “a amplitude” to —an amplitude—.

In claim 9, on line 22 delete “and frequency error state”.

In claim 9, on line 27 change “the frequency error state” to —a frequency error state—.

In claim 13, on line 5 change “the GPS” to —a GPS—.

In claim 13, on line 21 change “an quadrature” to —and quadrature—.

In claim 13, on line 22 change “a amplitude” to —an amplitude—.

In claim 13, on line 23 delete “and frequency error state”.

In claim 13, on line 28 change “the frequency error state” to —a frequency error state—.

### ***Allowable Subject Matter***

Claims 1-16 are allowed.

The following is an examiner’s statement of reasons for allowance:

Claims 1-16 are considered allowable because the present invention comprises a method for residual generating using early and late in-phase and quadrature correlation signals and a propagated state matrix; and using the generated residual, the state estimates and a state error covariance matrix to calculate the code phase error, carrier phase error, carrier frequency error, and the signal amplitude. The closes art, Zhodzishky et al. (US 2003/0085839 A1) shows a similar circuit including a method for residual generating to correct for carrier cycle slips. However, residual generating using early and late in-phase and quadrature correlation signals

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and a propagated state matrix et al fails to teach using the generated residual, the state estimates and a state error covariance matrix to calculate the code phase error, carrier phase error, carrier frequency error, and the signal amplitude. This distinct feature has been included in independent claims 1, 9, and 13 rendering them allowable. Claims 2-8, 10-12, and 14-16 are dependent on allowed claims and are thereby allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Munoz whose telephone number is 571-272-3045. The examiner can normally be reached on Monday-Friday 8:30a.m-4:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*William Tunney*

GM  
February 16, 2005

*Mr. Corrielus*  
**JEAN B. CORRIELUS**  
**PRIMARY EXAMINER**

*2/18/05*